

Claims

What is claimed is:

1. A method for managing access to a first data location on a storage device, comprising:
 - 5 receiving from a requestor a request to access the first data location, the request comprising first information adapted to identify the first data location and second information adapted to identify data expected to be in the first data location, the second information adapted to be compared with third information, the third information being adapted to identify data stored in the first data location, the third information being associated with the storage device,
 - 10 comparing the second information with the third information,
 - granting access to the first data location if the second information matches the third information,
 - denying access to the first data location if the second information does not match the third information, and
 - 15 notifying the requestor that the second information does not match the third information, if the second information does not match the third information.
2. The method of claim 1, further comprising notifying the requestor of a second data location, the second data location containing the data expected to be in the first data location.
3. The method of claim 1, further comprising disregarding a portion of the third information by
 - 20 applying a mask to the third information.
4. The method of claim 1, further comprising changing a portion of the third information by applying a mask to the third information.
5. The method of claim 4, wherein the comparing and changing steps are executed as an atomic operation.
- 25 6. The method of claim 1, wherein the third information is persistent.
7. The method of claim 1, wherein the storage device is a first storage device and the third information is stored in a second storage device.

8. The method of claim 7, wherein the second storage device is a memory.
9. The method of claim 1, wherein the request to access the first data location is a data input request.
10. The method of claim 1, wherein the request to access the first data location is a data output request.
11. The method of claim 1, wherein the request to access the first data location is a data movement request.
12. A method for regulating access by a first process to a first data location on a storage device, comprising:
 - 10 receiving from the first process a request to access the first data location, the request comprising first information adapted to identify the first data location and second information adapted to identify the first process, the second information adapted to be compared with third information, the third information being adapted to identify the access rights of the first process, the third information being associated with the storage device.
 - 15 comparing the second information with the third information, granting access to the first data location if the second information matches the third information, and denying access to the first data location if the second information does not match the third information.
- 20 13. The method of claim 12, wherein the first data location contains information adapted to identify the access rights of a second process, further comprising disallowing the second process access to a second data location on the storage device by changing data contained in the first data location.
14. The method of claim 12, wherein the third information is persistent.
- 25 15. The method of claim 12, wherein the storage device is a first storage device and the third information is stored in a second storage device.
16. The method of claim 12, wherein the second storage device is a memory.

17. A computer program product that includes a medium useable by a processor, the medium having stored thereon a sequence of instructions which, when executed by said processor, causes said processor to execute a method for managing access to a first data location on a storage device, comprising:

5 receiving from a requestor a request to access the first data location, the request comprising first information adapted to identify the first data location and second information adapted to identify data expected to be in the first data location, the second information adapted to be compared with third information, the third information being adapted to identify data stored in the first data location, the third information being associated with the
10 storage device,

 comparing the second information with the third information,

 granting access to the first data location if the second information matches the third information,

15 denying access to the first data location if the second information does not match the third information, and

 notifying the requestor that the second information does not match the third information, if the second information does not match the third information.

18. The computer program product of claim 17, further comprising notifying the requestor of a second data location, the second data location containing the data expected to be in the first
20 data location.

19. The computer program product of claim 17, further comprising disregarding a portion of the third information by applying a mask to the third information.

20. The computer program product of claim 17, further comprising changing a portion of the third information by applying a mask to the third information.

25 21. The computer program product of claim 20, wherein the comparing and changing steps are executed as an atomic operation.

22. The computer program product of claim 17, wherein the third information is persistent.

23. The computer program product of claim 17, wherein the storage device is a first storage device and the third information is stored in a second storage device.
24. The computer program product of claim 23, wherein the second storage device is a memory.
25. The computer program product of claim 17, wherein the request to access the first data location is a data input request.
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26. The computer program product of claim 17, wherein the request to access the first data location is a data output request.
27. The computer program product of claim 17, wherein the request to access the first data location is a data movement request.
- 10 28. A computer program product that includes a medium useable by a processor, the medium having stored thereon a sequence of instructions which, when executed by said processor, causes said processor to execute a method for regulating access by a first process to a first data location on a storage device, comprising:
receiving from the first process a request to access the first data location, the request comprising first information adapted to identify the first data location and second information adapted to identify the first process, the second information adapted to be compared with third information, the third information being adapted to identify the access rights of the first process, the third information being associated with the storage device.
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comparing the second information with the third information,
granting access to the first data location if the second information matches the third information, and
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denying access to the first data location if the second information does not match the third information.
29. The method of claim 28, wherein the first data location contains information adapted to
25 identify the access rights of a second process, further comprising disallowing the second process access to a second data location on the storage device by changing data contained in the first data location.

30. The method of claim 28, wherein the third information is persistent.
31. The method of claim 28, wherein the storage device is a first storage device and the third information is stored in a second storage device.
32. The method of claim 28, wherein the second storage device is a memory.